

**REMARKS****THE ALLOWABLE SUBJECT MATTER**

Claim 4 was objected to as being dependent upon a rejected base claim, but was acknowledged to contain allowable subject matter. Claim 4 is hereby amended in independent form to include the limitations of base claim 1. Allowance is requested.

**THE 35 U.S.C. § 102(B) AND 103(A) REJECTIONS OF CLAIMS 1 AND 7**

Claims 1 and 7 were rejected under 35 U.S.C. § 102(b) as being anticipated by JP 6-316422. Claims 1 and 7 were also rejected under 35 U.S.C. § 103(a) as being unpatentable over JP 6-316422. Reconsideration is requested.

The Examiner alleged JP 6-316422 disclosed an apparatus comprising a reaction vessel, a burner that generates glass particulates, and a bait rod on which the glass particulates are deposited (Fig. 1) to provide a process wherein combustion gas and raw material is supplied to the tip of the bait rod as it is rotated and drawn upwardly. The Examiner further alleged the apparatus to provide a partition member or shutter 31 located in the reaction vessel such that the vessel is separated into an upper and a lower part, wherein the partition member "may be provided in a space around the soot preform (Fig. 3)." The Examiner further alleged the apparatus to comprise an exhaust port in the side wall below the partition member and a burner disposed below the partition member.

Claim 1 recites equipment for manufacturing a soot preform comprising a reaction vessel, a burner that generates glass particulates, and a starting rod on the tip of or around which said glass particulates are deposited in said reaction vessel, said equipment being further equipped with a partition board which is provided in part of the space around a soot preform in said reaction vessel such that said space is separated into an upper and lower part, an exhaust port is

provided below said partition board in the side wall of said reaction vessel, and said burner is positioned in the space below said partition board.

Under the law of anticipation, “[f]or a prior art reference to anticipate in terms of 35 U.S.C. § 102, every element of the claimed invention must be identically shown in a single reference. *Diversitech Corp. v. Century Steps, Inc.* 7 USPQ2d 1315, 1317 (Fed. Cir. 1988). To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981 (CCPA 1974). “All words in a claim must be considered in judging the patentability of that claim against the prior art”. *In re Wilson*, 424 F.2d 1382, 1385 (CCPA 1970); *see also In re Ochiai*, 71 F.3d 1565, 1572 (Fed. Cir. 1995)(*stating* “[w]hen evaluating the scope of a claim, every limitation in the claim must be considered”); *In re Lowry*, 32 USPQ2d 1031, 1034 (Fed. Cir. 1994); MPEP §§706.02(j); 2142; 2143; 2143.03.

Applicants respectfully submit that JP 6-316422 does not teach or suggest the invention of claim 1. Specifically, it is submitted that JP 6-316422 does not teach or suggest the claimed reaction vessel wherein a partition board "is provided in part of the space around a soot preform in said reaction vessel such that said space is separated into an upper and lower part". Instead, Applicants respectfully submit that JP 6-316422 shows reaction vessel 10 and an attached cylinder 13 into which the preform is withdrawn. Cylinder 13 is an adjunct to the reaction vessel and does not separate the space that would otherwise be used, in a conventional manner, for soot deposition on a soot preform.

Applicants also submit that JP 6-316422 does not teach or suggest the method for manufacturing a soot preform recited in claim 7. Specifically, it is submitted that JP 6-316422 does not teach or suggest a method for manufacturing a soot preform comprising use of a reaction vessel "having a partition board provided in part of the space between said soot preform

and the inner wall of said reaction vessel at a position above an exhaust port and said burner which are provided in the wall of said reaction vessel such that said space is separated into the upper and lower parts." Applicants respectfully submit that cylinder 13 of JP 6-316422 does not separate the reaction vessel into upper and lower parts. Instead, as noted above, cylinder 13 is an adjunct to the reaction vessel and does not separate the space that would otherwise be used, in a conventional manner, for soot deposition on a soot preform.

Accordingly, Applicants submit that JP 6-316422 does not teach or suggest each and every element claims 1 and 7 and does not anticipate the claims under 35 U.S.C. § 102(b) or render said claims obvious under 35 U.S.C. § 103(a). Reconsideration and withdrawal of these rejections are requested.

#### **THE 35 U.S.C. § 103(A) REJECTIONS**

Claims 2-3 were rejected under 35 U.S.C. § 103(a) as being unpatentable over JP 6-316422. This rejection is traversed.

With respect to claim 2, the Examiner asserts that the Abstract of JP 6-316422 discloses soot flow can be stabilized and that the opening of the shutter can be controlled to provide an optimum size. The Examiner concludes and alleges that "[i]n view of the recognition of soot flow stabilization and opening size it would be within the purview of one of ordinary skill in the art to determine the desired interval . . . measurements".

In rejecting a claim under 35 U.S.C. §103, the Examiner is required to identify a source in the applied prior art for: (1) claim limitations; and (2) the requisite motivation to modify an applied reference or to combine applied references with a reasonable expectation of successfully achieving a specific benefit. *Smiths Industries Medical Systems v. Vital Signs, Inc.*, 183 F.3d 1347 (Fed. Cir. 1999). The Examiner implicitly acknowledges that JP 6-316422 does not teach the claimed limitation and instead alleges that the claimed limitation would be suggested to one

of ordinary skill in the art based on the disclosure of JP 6-316422's Abstract, appearing to rely upon the precedent of *In re Aller*, 220 F.2d 454 (CCPA 1955), wherein it was held that discovering the optimum or workable range involves only routine skill in the art.

However, a particular parameter must first be recognized as a result-effective variable before the determination of the optimum or workable ranges of the variable might be characterized as routine experimentation. *In re Antonie*, 559 F.2d 618 (CCPA 1977). JP 6-316422 teaches that a clearance between a soot preform 20 and a movable shutter 31 is maintained at "an optimum value W" (see Fig. 3) by outward or inward movement of the shutter, as shown in Fig. 1 (see [0015]). It is this maintenance of an "optimized" diametral clearance W that provides the disclosed stabilization of soot flow. However, JP 6-316422 is absolutely silent about the distance between the shutter 31 and the exhaust pipe 11 and respective plurality of exhaust gas adjusting devices 12 and the relation of such distance to the soot flow and performance of the equipment or process.

Thus, the grounds of rejection fails to address the threshold inquiry required to predicate an obviousness rejection under 35 U.S.C. § 103(a) upon the claimed characteristics being obvious in view of modification of an alleged result-effective variable (see, e.g., MPEP § 2144.05(b); MPEP § 2143.01 ("Fact that the claimed invention is within the capabilities of one of ordinary skill in the art is not sufficient by itself to establish *prima facie* obviousness.")). Accordingly, it is submitted that the Examiner has not established a *prima facie* case of obviousness of claim 2 over JP 6-316422 under 35 U.S.C. § 103(a). Reconsideration and withdrawal of this aspect of the rejection is requested.

With respect to claim 3, this aspect of the rejection is traversed for the same reasons noted above with respect to claim 1. Reconsideration and withdrawal of this aspect of the rejection is requested for at least this reason.

Claim 5 was rejected under 35 U.S.C. § 103(a) as being unpatentable over JP 6-316422 in view of JP 5-330845. The cited disclosure of JP 5-330845 fails to make up for the deficiencies in the aforementioned teachings of JP 6-316422 in that JP 5-330845 merely shows a preform 2 disposed in a reaction vessel 3 and does not show a partition board of any sort, let alone a partition board "provided in part of the space around a soot preform in said reaction vessel such that said space is separated into an upper and lower part". This rejection is traversed for the same reasons noted above with respect to claim 1, which are omitted herein for brevity. Reconsideration and withdrawal of this aspect of the rejection is requested for at least this reason.

Claim 6 was rejected under 35 U.S.C. § 103(a) as being unpatentable over JP 6-316422 in view of JP 1-106534, JP 1-106534 being cited for a teaching of providing an air inlet "at a position opposite to said exhaust port below said partition board, in the wall of said reaction vessel," as claimed. Applicants submit that the cited disclosure of JP 1-106534 fails to make up for the deficiencies in the aforementioned teachings of JP 6-316422 in that JP 1-106534 does not show a partition plate "provided in part of the space around a soot preform in said reaction vessel such that said space is separated into an upper and lower part". This rejection is accordingly traversed for the reasons noted above with respect to claim 1, which are omitted herein for brevity. Reconsideration and withdrawal of this aspect of the rejection is requested for at least this reason.

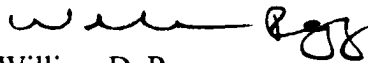
In accord with the recent revisions to 37 CFR 1.121, attached are the amendments to the claims.

New claims 8-13 are submitted to be patentable for at least the reasons submitted above and for the reasons claim 4 has been determined to contain allowable subject matter. Allowance of claims 8-13 is respectfully solicited.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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